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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,508	09/22/2003	Jose R. Salta III	042390P16833	1845

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EXAMINER

THAI, LUAN C

ART UNIT PAPER NUMBER

2829

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,508

Applicant(s)

SALTA, JOSE R.

Examiner

Luan Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-18 is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election *without traverse* of Group I, claims 1-18 filed on January 19, 2005, is acknowledged. Claims 19-25 have been canceled.

Claim Objections

2. Claim 6 is objected to because of the following informalities:

In claim 6, line 2, "a portion on a first mold cap" should be changed to --a portion of a first mold cap--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

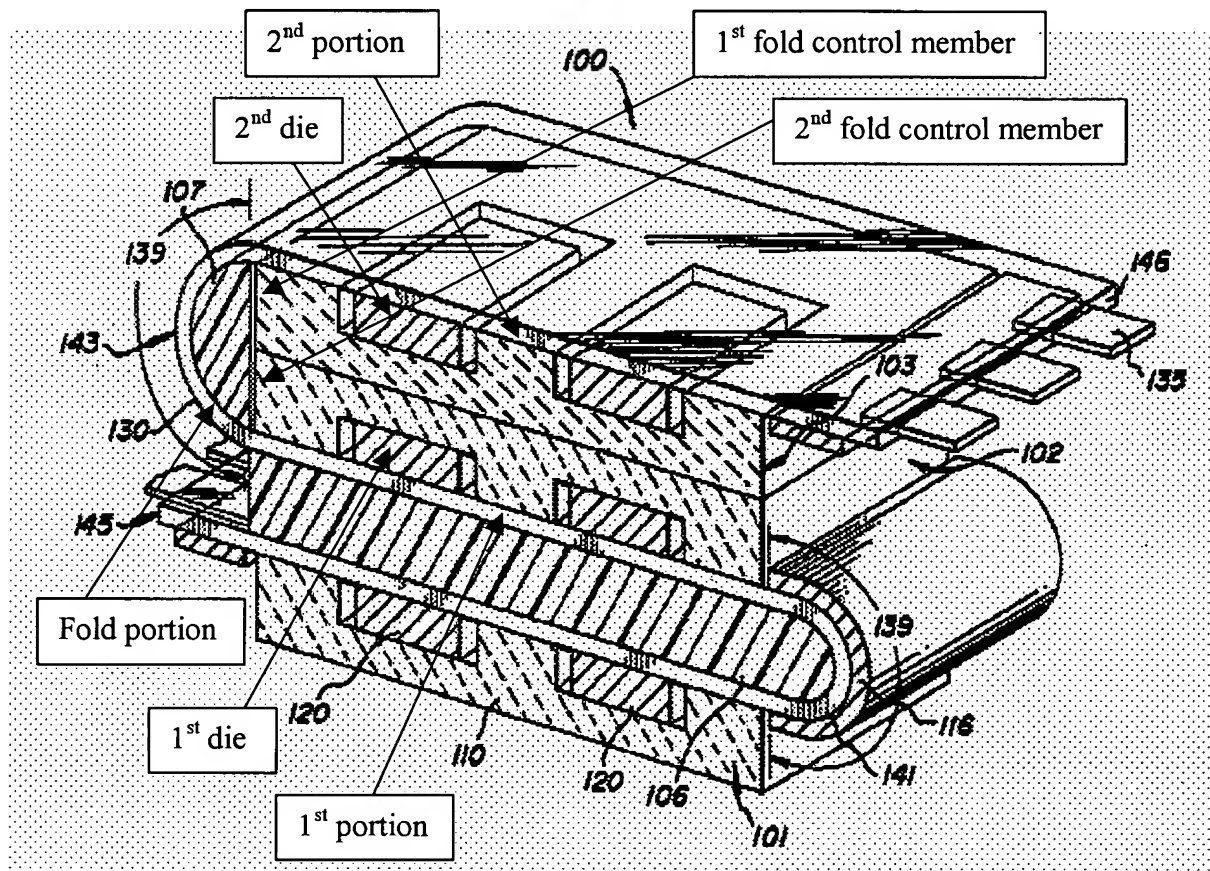
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5 and 7-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kornrumpf et al (5,345,205).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1-3 and 7-12, Kornrumpf et al. (see specifically figures 1-2 and 8-9) disclose an electronic package comprising: a substrate (130) having first and second portions and a fold portion (143/139) between the first and second portions; a first die (120) mounted to the first portion; a first mold cap (102) over the first die, wherein the end side portion of the first mold cap adjacent to the fold portion (139) is considered as a

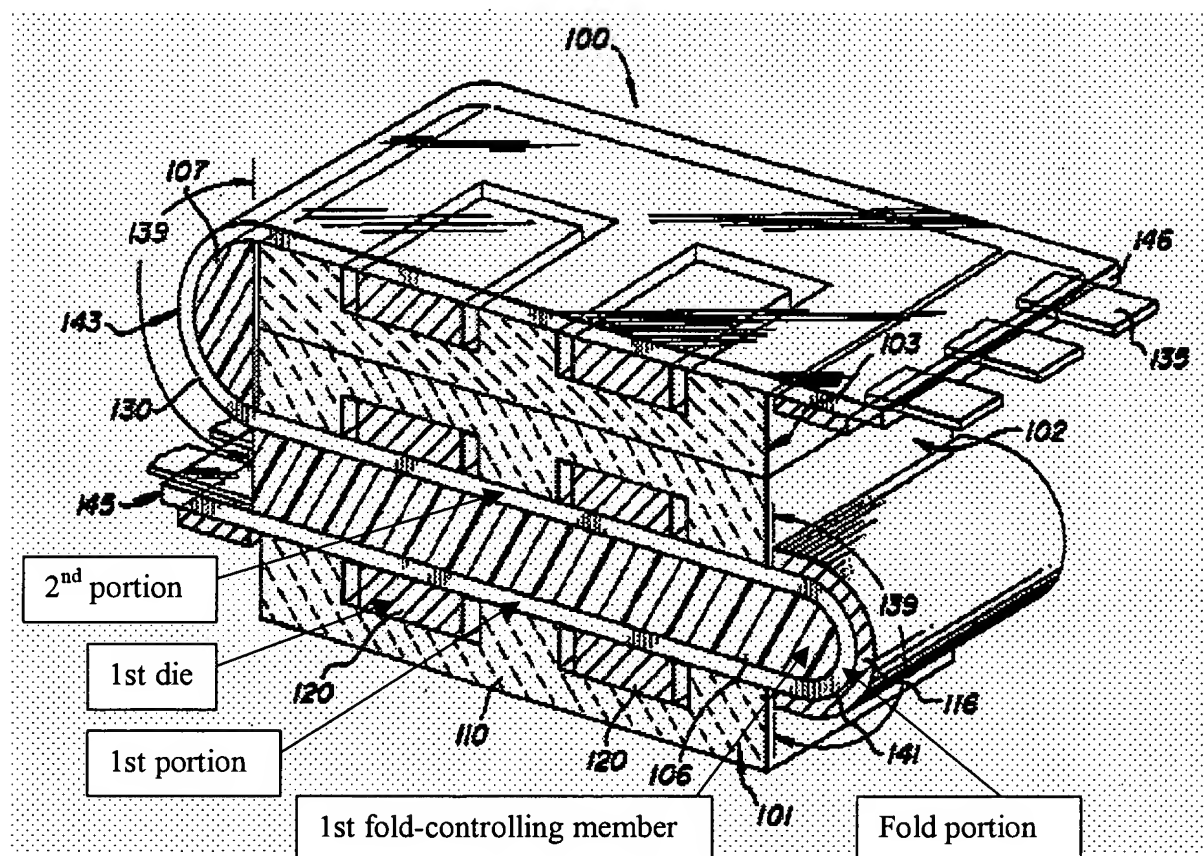


first fold-controlling member since the fold portion (139) starts to be curved at that end side portion. Similarly, a second die (120) mounted to the second portion of the substrate (130); a second mold cap (103) over the second die, wherein the end side portion of the second mold cap (103) adjacent to the fold portion (139) is considered as a second fold-controlling member since the fold portion (139) starts to be curved at that end side

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portion, and wherein the fold portion is wrapped around the first and second fold-controlling portions. Kornrumpf et al. further disclose an adhesive layer on the first mold cap (102) and the second mold cap (103) being attached to the adhesive layer (Col. 10, lines 48+).

Regarding claims 4-5 and 13, Kornrumpf et al disclose an electronic package comprising:



a substrate (130) having first and second portions and a fold portion (141/139) between the first and second portions; a first die (120) mounted to the first portion; a first mold cap (101) over the first die (120), a first fold-controlling member (106) being wrapped partially around the first fold-controlling member to place the second portion over the

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first portion, wherein the surface of the first fold-controlling member around which the fold portion (141/139) is wrapped is curved from the first portion up to the second portion. Note that element (106) is also considered as the claimed “a mold cap” with the curved end portion being considered as the fold-controlling member, and it appears from figure 1 that the “mold cap” (106) is attached to the first portion and over the first die (120), wherein the fold portion is wrapped partially around the mold cap and substantially conforming the shape of the curved surface, to place the second portion over the first portion.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kornrumpf et al (5,345,205).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 6 and 14-15, Kornrumpf et al discloses the claimed invention as detailed above except for an adhesive layer on the mold cap for the second portion attached to.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form an adhesive layer on the mold cap (106) of Kornrumpf et al's

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package for the purpose of bonding the second portion of the substrate (130) on the mold cap (106) and such modification is held to be within the ordinary designing ability expected of a person skilled in the art.

7. The following reference(s) is/are cited as of interest to this application:

U.S. Pat. No. 6,225,688 (figures 31-32) to Kim et al. is/are cited for showing a stacked microelectronic assembly with a fold-controlling member between the first and second portions of a substrate.

Allowable Subject Matter

8. Claims 16-18 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art taken either singly or in combination fails to anticipate or fairly suggest a detail and the structural interrelationship among: the first and second mold caps over the first and second microelectronic dies having first and second curved surfaces at the edges thereof, respectively, and the fold portion being partially wrapped around the first curved surface and partially around the second curved surface to place the second portion over the first portion, as recited in independent claim 16.

Claims 17-18 are allowable since each includes the limitations of claim 16.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 6:30 AM - 5:00 PM, Monday to Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley W. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Luan Thai', with a long horizontal flourish extending to the right.

Luan Thai

Primary Examiner

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March 16, 2005